

A PEN PICTURE OF CLEMSON COLLEGE

Works for Welfare in Many Ways

Picture a country estate of 1,500 acres, with stately buildings placed at elevate points to form a great irregular circle of half a mile in diameter. Inclose in this circle a beautiful grove of native oaks, threaded by smooth driveways and paths and cement sidewalks. Turn to the north and for a background outline against the sky at a distance of 20 miles, range after range of mountains, the home of the Highlands, of Caesar's Head, Whitesides and other lofty peaks of the Blue Ridge. Think of these mountains as in summer clothed with verdure, standing out black against the horizon, and in winter often white with snow. Take for the southern boundary a river of Indian lineage and follow in its sweeping crookedness the swift and turbulent Seneca as it twists this way and that to mark the confines of the estate. And to this setting add broad expanses of river bottom lands green with corn, steep hillsides sinuous with level grassy terraces and cool pastures with winding brooks and graceful shade trees and you have a picture of Clemson College, not colored to suit the canvas of an artist, but as seen every year by nearly a thousand young South Carolinians who seek amid these surroundings an education that will prepare them for self-respecting, self-supporting citizenship.

A Storied Spot.

Clemson College is a unique blending of the old and the new, of the historic with the now. Just across the road from the cadet dormitories, which every session house over 800 young men, and in sight of the new electric power station that day or night beats as the industrial heart of the community, is the white columned mansion of the illustrious John C. Calhoun. One can almost picture the great statesman, as with hands behind him he paces the avenues of cedar and oak, putting into form those matchless ideals of patriotism whose fulfillment he never lived to see.

About 50 yards to the rear of the mansion is a queer little one-story room structure with columned porch to match the mansion. This was the "study" of the great statesman, and here were written many of his great orations. Under this little study, which is about 20 feet square, is dug a deep pit in which ice cut in winter was stored for summer use. How the seasons must have changed, for only during one or two winters of the 20 which the writer has spent in the "up country" has ice formed in sufficient thickness to justify such ample storage.

In the old mansion are many historic relics, including a chair used by Gen. George Washington, and a seven-foot mohair-covered lounge on the back of which is carved the American eagle. It is said that the engraving on our coins was copied from this carving.

The old mansion with its historic memories, the peer of the Hermitage, Mount Vernon and Monticello, is a

priceless State and national asset, and should be a perennial source of inspiration to succeeding generations of young South Carolinians who are privileged to live for four years in the shadow of its historic walls.

Many are wont to ask why the college does not bear the name of Calhoun instead of the name of his son-in-law, Thos. G. Clemson. The answer is that nowhere does it appear in the records that Mr. Calhoun ever wished or planned the erection of an industrial and technical college on the old homestead. The complete story of Mr. Clemson's part in the founding of the college is too long to be told here.

A Vast Plant.

The college tract contains over 1,500 acres. On the property, there are 23 principal public buildings, 70 dwellings and 64 minor buildings. The college has in its employ 401 teachers, officers and laborers. Its inventoried property is \$1,327,728.57. The officers of the college send out yearly over 35,000 letters and over 435,000 other pieces of mail matter, most of which give agricultural information.

In addition to the parent station, the college maintains two branch experiment stations—one near Summerville and the other at Florence. One more to be situated in the sand hill section of the State, just as soon as funds will permit, will complete a system representing the principal soil types of the State.

The enrollment has grown from 446 students in 1893 to 834. Originally there were but two courses of study—now there are 12. In addition to these regular degree courses, there is a four weeks' course for farmers and a one-session practical agricultural course extending from October 1 to June 1 for men over 18.

The college maintains 168 four-year scholarships and 51 one-year scholarships, the cost of which, amounting to nearly \$22,000, is paid out of the receipts from the fertilizer tag tax.

Public Service.

But the trustees of Clemson College have not only organized an efficient system of fertilizer inspection and analysis, by which the farmer gets value received from the tax he pays, and built and maintained a great agricultural and mechanical college, but they have gone a step farther than is required by their compact with the people and have sought to return to those who pay the tax in the shape of direct service, all that could be spared over and above the cost of operation and building. The public service has grown as the fertilizer tax has grown, now reaching an annual total of over \$100,000.

Clemson College, with its plant well developed, its patronage assured and overflowing, its lines of public service popular and efficient, has behind it a creditable record of achievement, and before it a future bright with the promise of usefulness to South Carolina.

GROWING COWPEAS THE SOUTH'S WONDERFUL LEGUMINOUS CROP

By J. N. Harper, Director, S. C. Experiment Station.

The cowpea is the best leguminous crop for the South. It produces hay fully equal to red clover. It resists drought and a stand is easily secured. It is well adapted to nearly every type of soil in the South, and has few diseases and insect pests, as it is not only adds large amounts of nitrogen to the soil, but also puts the soil in the best physical condition. This crop has been grown for a great number of years in the South, but its full importance to Southern agriculture has not yet been fully realized.

The seed can either be sown broadcast or in rows. If wanted for seed, they should be planted in rows three feet apart and cultivated. When sown broadcast no cultivation is required. However, more seed must be used. The cowpea should not be planted in the spring until the ground is thoroughly warm and all danger of frost is passed. While the cowpea plant is well adapted to all kinds of soils, it is best suited to a warm, sandy soil. The hay from cowpeas is fully equal to that of red clover and the best varieties for hay purposes are the Unknown, Wonderful, Iron Clay, Whippoorwill, Red Ripper, Red Crowder, Calico and the New Era.

Land containing the fungus which causes wilt should be sown to the Iron variety, which resists the root knot and wilt disease. The best va-

rieties for seed are Whippoorwill, New Era, Red Ripper, Black Eye, Red Crowder, Early Bullock, Black Bunch, Calvin and Clay, Calico, Conch, Sport, Taylor, Warren's New Hybrid. This station has obtained 19.6 bushels of seed per acre with the Whippoorwill. Probably the best all round variety is Whippoorwill. It is erect in its growth, is medium early in maturing its seed and a prolific bearer.

The early varieties are New Era, Warren's Extra Early, Red Crowder, Whippoorwill, Extra Early Brown Eye and Early Bullock.

Late varieties are Taylor, Calico, Clay, Unknown, Wonderful and Red Ripper.

The best varieties for soil improvement are Unknown, Iron Clay, Red Ripper, Whippoorwill, Red Crowder and New Era.

The following varieties are trailing to recumbent in their growth: Calico, Conch, New Era, Red Ripper and Red Crowder. Cowpeas should always be well fertilized with acid phosphate and some potash. On the sandy soils of the coastal plain, a large amount of potash should be used. At our Coast Experiment Station little growth was made until the soil was sweetened with marl.

As the cowpea is a legume and collects large amounts of nitrogen from the atmosphere by means of the bacteria growing in the nodules on its

roots, it requires little ammonia in the fertilizer.

When intended for hay, cowpeas should be planted broadcast with some other forage crop. German millet and sorghum are probably the best crops for this purpose. This station has obtained as much as seven tons of well cured hay from sorghum and peas, two and one-half tons from peas and crab grass, and three and one-quarter tons from peas and millet.

The most valuable part of the pea plant is the leaves, and the hay should be cured in such a manner that the largest amount of leaves possible should be retained with the hay. For that reason the pea should not remain long in the swath, but as soon as the leaves are dry sufficiently, the hay should be raked in windrows for a day or so, then it should be dried out in cocks. A splendid way to cure cowpea hay is to take it from the windrow and stack it on a pole about six feet long, driven in the ground with crossarms nailed horizontally, the lowest being about eight inches from the ground.

The practical place of the cowpea in rotation is after small grain. As soon as oats or wheat are cut, the land should be disked and planted in peas, sown broadcast, from four to six pecks per acre. This crop of peas will shade the ground and improve the physical condition of the soil, will add nitrogen to the soil and prepare the land for the succeeding grain crop.

As cowpea hay is a most valuable food, it should always be cut for hay. However, if the object is to improve the land the pea vines can be turned under. If the succeeding crop, however, is to be a small grain, it is better to cut the vines off as the pea vines will form a kind of mulch which will make the soil very loose and prevent the proper rise of capillary moisture to the small grain. Small grain prefers a compact soil rather than a loose, porous soil.

It always pays to plant cowpeas in corn at the last plowing. If an early maturing variety is planted at this time, such as the Whippoorwill, New Era, or Taylor, the seed obtained will far offset the expense and trouble of planting, and the peas growing in the corn, instead of hindering the growth of corn, will increase the yield slightly, and will put the land in better condition for the succeeding grain crop. Small one-horse drills now being manufactured for the purpose of drilling cowpeas in corn do the work better than it can be done by hand. It always pays to plant a patch of peas mixed with soy beans as a hog grazing crop. No machine has yet been manufactured that will satisfactorily pick peas. The thrashing, however, can be accomplished by a pea huller, which is far less expensive than thrashing out with flail.

In the sandy soils of the Coastal Plain, the wilt disease and root knot disease is widely disseminated. No method has yet been found for combating these diseases, excepting the rotation of crops and the planting of wilt resistant cotton and the Iron cowpea, which resists the wilt and the root knot. Stored cowpeas should always be treated with carbon bisulphide to keep away weevils.

FIGHTING THE HOUSE FLY.

Use of Fly Trap, Screens and Spray Against Dangerous Pest.

By A. F. Conradi, State Entomologist and Head of Entomological Division, Clemson College.

The house fly breeds mainly in moist horse and sow manure and privy closets. Unlike the stable fly it cannot bite. Before thunderstorms and on sultry days the stable fly molest man with its bites and this leads to the erroneous conclusion that the house fly bites.

The eggs of the house fly are laid on the manure and hatch the same day. In five days the maggot transforms to the pupa or resting stage and in ten days from the time the egg is laid the full grown insect appears. Its first impulse is to find something to eat, and with the fresh filth of its putrefactive breeding place covering every part of its body, it goes to the kitchen where it samples the meat, bathes in the milk, trails over the butter, licks up the jelly, crawls over the baby's face and hands and then goes back to the manure pile to lay eggs and return to the house for more food.

Besides a general carrier of disease and filth, the house fly is known to carry several of our most dangerous diseases. The campaign against the fly should begin at the breeding ground.

Use the fly trap judiciously about the barns, privy closets, kitchen door, hog pens and other breeding places. Circular 23 of Clemson College gives directions for making traps and one trap is in the hands of each of the county demonstration agents where it can be examined.

Avoid filth or any other fly-attracting material about the premises, such as garbage or slops. Garbage and kitchen refuse should be kept in tightly covered vessels. Never throw it on the ground. It is sure to attract flies.

Screen privy closets. Have every closet provided with a keg or barrel of air slaked lime and use freely to dry up the closet material.

Screen the house.

Manure is valuable. If removed from stalls at a time when it cannot be immediately spread on the field it should be stored in a definite place, preferably in a compost shed or pit. To have manure scattered or placed at

numerous places about the barn is wasteful and it makes it very difficult to maintain sanitary conditions.

The spray for treating manure to kill maggots is described in Circular No. 23, of the Experiment Station.

THE COTTON RED SPIDER.

Methods Recommended for Control of This Insect Pest.

By A. F. Conradi, State Entomologist and Head of Entomological Division, Clemson College.

During this dry weather one will notice reddish areas on leaves of certain plants. It is especially noticeable on violets. The leaves soon turn brown and become dry and brittle. Many people call it rust, but if one stops to examine into the matter closely he will find little reddish colored mites on the under surfaces of the leaves. The characteristic web can also be easily noticed. This is the red spider. It is a dry weather insect, and if not stopped, it often does serious damage.

The cotton red spider is one of our most important cotton pests during June, July and August. This, so far, appears to be a favorable year, and farmers should watch their cotton for the first appearance of this pest. The damage occurs in spots in the field.

Poke weed and violet plants should not be allowed in and about plantations, while underbrush should be kept down as far as practicable.

As soon as the first infested plants are discovered they should be carefully removed and burned. Blood red spots will show on the upper surface of leaves attacked. If this is not done then the insects will spread from plant to plant and in a short time cause the ruin of a large area of cotton. This migration has to take place on foot, as the insects have no wings. This makes it at once apparent that to a great extent at least it is everybody's own problem, regardless of his neighbors.

Whenever the infestation spreads and the infested spots become larger, one of several sprays may be given. The most satisfactory of these is potassium sulfide, recommended by Dr. E. A. McGregor, of the Bureau of Entomology. This material costs about 25 cents per pound, and the spray consists of three pounds of potassium sulfide in 100 gallons of water. In spraying, the under sides of the leaves should be thoroughly covered. This is accomplished by means of an elbow of 45 degrees. A short one-quarter inch pipe makes a good extension rod, and in the absence of an elbow the end of this pipe may be bent.

HOG CHOLERA AND HOW TO CONTROL IT.

By Dr. M. Ray Powers, State Veterinarian and Head of Veterinary Division, Clemson College.

There are two principal methods of preventing hog cholera; one by the use of serum, and the other by taking care to avoid the methods of spreading the disease, which are here outlined briefly.

Hog cholera is spread by failure properly to dispose of the carcasses of dead hogs. Buzzards, dogs and other animals feeding upon these carcasses can carry infection to other premises. All carcasses should be burned or buried immediately, and buzzards should be destroyed in communities where they are not protected by law. In communities where these scavengers are thus protected, the law should be repealed and the birds destroyed.

Another very common method of spreading hog cholera is walking through yards or fields where sick hogs are kept and carrying the infection on shoes and clothing to other premises where healthy hogs are confined. It should be remembered that discharges from hogs infected with cholera are very infectious, and the owners should not go or allow any of their help to go on premises where there are sick hogs. Neither should they allow neighbors to go among their hogs when cholera exists in the community. Healthy hogs should be cared for by persons who have not been where the disease exists, and no one else should be allowed near the healthy drove.

Cholera may be spread by streams receiving drainage from infected premises, by buying hogs from premises where the disease exists, or from public stock yards, or by failure to isolate newly purchased hogs until their freedom from disease has been ascertained. These three matters deserve careful attention.

When cholera exists in a neighborhood every hog owner should establish a strict quarantine on his individual premises. When the disease exists on adjoining farms hogs should be protected by injection with anti-hog cholera serum.

The sudden death of one or two hogs should lead the owner to suspect cholera. If upon examination of the carcasses cholera is found, all healthy hogs should be moved at once to new lots or pens until they can be injected with serum.

A farmer finding cholera among his hogs should at once apply to the Veterinary Division, Clemson College, for serum, which is to be had at actual cost of manufacture, and should secure the services of his county farm demonstration agent, who has been instructed in the use of serum.

It is the duty of all citizens to see that the State law relative to prompt disposal of carcasses is strictly enforced.

FREEDING THE STATE OF THE CATTLE TICK.

By Dr. M. Ray Powers, State Veterinarian and Head of Veterinary Division, Clemson College.

In July, 1907, the Veterinary Division of Clemson College, in co-operation with the U. S. Bureau of Animal Industry, commenced tick eradication work in Oconee, Pickens, Greenville and Anderson Counties. Since that date this work has been gradually and systematically extended until fourteen counties are now free from ticks and released from Federal Quarantine. Systematic work has also been in progress in six other counties for the past year, and these should be in condition for release this fall.

Prior to 1914 the expense of tick eradication work was borne by Clemson College and the U. S. Bureau of Animal Industry. With the exception of about \$500 received from citizens of these counties) no funds were avail-

able from other sources. At the last meeting of the General Assembly, \$30,000 was appropriated for co-operating with the U. S. Bureau of Animal Industry in the work of tick eradication in South Carolina, this sum to be expended through Clemson College. Shortly after this appropriation was received, arrangements were made to place tick eradication under an inspector who could devote his entire time to this work. Tick eradication is now being rapidly pushed into all tick infested counties of this State.

BERMUDA THE BEST SOUTHERN GRASS.

By J. N. Harper, Director S. C. Experiment Station, Clemson College.

Bermuda grass is the most valuable grass the South possesses and is the best for pasture and lawn purposes. Its true value is not yet appreciated by its most ardent advocates. There are several varieties or types of this grass grown in the South differing from each other mainly in the size of stems and spiculets and in hardness. Some of the smaller, hardy types are from two to three weeks earlier in making their growth in the early spring than are the larger varieties. There are other species of grasses, such as the widgeon and Egyptian grass, often mistaken by farmers for Bermuda, and for this reason Bermuda grass is sometimes denounced as being worthless by farmers who have growing on their farms the other species which are of little value.

Bermuda grass, when grown on well improved land and properly treated, will afford during six months of the year as much grass as the average blue grass pasture of Kentucky. I have known one acre to furnish all the food during the summer months for six calves. Three acres of this grass on improved land will pasture fifteen brood sows with their litters, requiring no other food than that afforded by five acres of forage crops. When grown on rich bottom lands and kept free from weeds and properly fertilized, Bermuda grass affords a splendid meadow, as it can be cut twice during the season, yielding from three to four tons of excellent hay. Bermuda hay is rich in carbohydrates and makes as good hay as timothy. It is well suited for work stock, but is not so good for dairy cattle.

Fortunately, we have discovered that Bermuda grass is not a serious weed enemy, for as it does not mature seed to any extent in this country and spreads only by underground and overground stems it can be easily kept in check. As it is a tropical plant and requires plenty of sunlight it can be easily eradicated in two or three years by shading it out by growing winter legumes such as peas, planted with oats, followed by a summer legume such as cowpeas or velvet beans. Bermuda does not damage cotton anything like as much as does crab grass, and a good crop of corn can be made in the field badly infested with Bermuda if properly cultivated. Bermuda grass is of great benefit to the soil in that it prevents it from washing, adds humus to the soil and fills the soil with innumerable fibrous roots which produce the best form of humus. It is an annual with perennial, underground stems. If Bermuda is planted in the fall it can be grown with oats and vetch, or with bur clover. It is a splendid plant for terrace banks and is also valuable to grow on railroad and pond banks to prevent them from caving in and washing away.

As it requires plenty of sunlight, it will not grow well in shaded places. It can be propagated by sowing the seed at the rate of two pounds to the acre or by planting pieces of sod. A good way to obtain a Bermuda sod is to break the land with a turning plow or disk plow and in every furrow drop a small piece of sod every twelve inches, the next furrow covering it. It can be sowed almost any time during the year, but the best time is in the early spring. It should be planted after some winter legume, such as our clover, crimson clover, or vetch, if planted in the spring; and if planted in the fall, should follow cowpeas, soybeans, velvet beans or begonia. After the land has been plowed and the plants dropped, the land should be thoroughly harrowed to make the pasture smooth and even.

Cattle should be turned into the pasture as soon as possible. The best Bermuda pasture can be ruined by allowing weeds and other grasses to grow. Bur clover can be sown in the fall in a Bermuda pasture. Bermuda grass is usually ready for grazing in June 1st. After the pasture has remained in Bermuda grass four or five years, it should be plowed up in the early spring and planted in cowpeas. The cowpeas will improve the physical condition of the soil and will add nitrogen, which is most beneficial to the Bermuda. If a Bermuda pasture is allowed to run too long it becomes sod-bound and a poor quality of grass is produced. It is a heavy feeder on nitrogen and should be fertilized with an application of nitrate of soda about the middle of every April, using from 50 to 100 pounds per acre. Acid phosphate should be applied every four years at the rate of 300 or 400 pounds per acre. A good time to apply this is at the time the land is broken in the spring preparatory for a crop of peas. One thousand pounds of lime is also very beneficial. This can be applied once every five or six years. If Bermuda is planted with Texas blue grass, white clover and common vetch a pasture can be obtained that will afford good grazing nine or ten months in the year.

RESULTS OF TOP-DRESSING.

Best Times to Apply Nitrate of Soda to Corn and Cotton.

By T. E. Keitt, Chemist, S. C. Experiment Station, Clemson College.

Results obtained at the South Carolina Experiment Station show that a top-dressing with nitrate of soda gives good results on cotton, corn and small grains. The increase is most marked during a wet year, because this nitrogen is already in an immediately available form, while the rotting of organic sources does not proceed as rapidly as usual on account of the excess of moisture in the soil. The amount to apply per acre varies with the fertility of the soil and the previous fertilization, but we would suggest from fifty pounds per acre on poor land up, according to the fertility of the soil.

Early applications are coming into favor. We recommend that the soda be applied to corn when it is between knee and waist high, to cotton just as the shapes begin to form, and to small grain in March. Care should be taken not to sow nitrate of soda on wet plants, because it is likely to scald them. It is best to apply it just after a rain, when the moisture has dried off of the leaves of the plants, then cultivate with a much forming implement as soon as the ground is dry enough to plow.

GASOLINE ENGINES

ON THE MODERN FARM.

Some Practical and Helpful Details in Operating This Aid to Farming.

By Styles Howard, Assistant Professor Machine Shop, Clemson College. Of the various power-producing machines in use on the farm, probably the most used and the most adaptable to all sorts of conditions is the single-cylinder gasoline engine of the four-stroke cycle type. This machine is made in two forms, vertical and horizontal, and with either air or water-cooled cylinder.

While machines of different makers vary as to details, they all have the same essential parts; namely, cylinder with inlet and exhaust valves, piston, connecting rod, crank shaft, crank shaft bearings with supports, fly wheels, exhaust valve opener, governor, ignition apparatus, carburetor, cooling apparatus and oiling system. These engines may be purchased in sizes from one-half horse power up-

Unlike the steam engine, with whose pulling powers we are familiar, the gasoline engine will not carry much overload; hence it is advisable to buy a machine large enough to do the maximum work required of it without overloading. If the engine is to be used for pumping only, small special pumping machines that give excellent service may be bought at a reasonable price. The farmer may have but one engine, it is probably advisable in all cases to procure a larger machine than the small sizes, a machine that will drive the wood saw, the corn sheller, the feed grinder, and so on. These machines give a relatively high efficiency at light loads, and it is, therefore, not objectional to run them light.

The farmer, for a small outlay of money, can provide for a room in which he can set his engine and such machines as he desires to run with it, and his wood saw may occupy an open shed at the side of the room. A rod of cold-rolled steel, mounted in hangers attached to the overhead woodwork, makes an excellent line shaft at low cost. This shaft should run alongside the full length of the room to provide for as many machines as the room will hold. The feed grinder, corn sheller, etc., may be put together in a part of the room separated from the balance of the room by a partition, and beyond this partition may be installed the washing machine, the cream separator, the churn, the electric plant, etc. These machines are driven by the line shaft by means of belts.

In a limited space it is not possible to discuss the many uses to which a gasoline engine may be put on the farm, but the writer wishes to impress on the farmer the fact that it is well worth the farmer's time to acquaint himself with the possibilities of the gasoline engine with reference to his own particular case. Manufacturers and dealers are ready to supply full and free information on request.

A great many people are under the impression that the gasoline engine is a very unreliable and dangerous thing. This erroneous impression is due to the fact that the machine is not understood by these people. As a matter of fact, the gasoline engine is one of the simplest of prime movers, and if kept in good order and in proper adjustment it is a most dependable source of power. When the farmer forms the habit of rubbing down his engine frequently and looking it over for loose nuts and slipped adjustments, at the same time looking carefully to the quality of lubricating oil he uses, he will find that he possesses a safe, economical, and very satisfactory power.

COLICS OF HORSE AND MULE.

Types of Malady and What to Do in Treating Each Kind.

By Dr. M. Ray Powers, State Veterinarian and Head of Veterinary Division, Clemson College.

One of the most common and alarming diseased conditions occurring in horses and mules is that of colic. The term is a very loose one, being generally used to denote any abdominal pain whatever, and it may readily be inferred that it, therefore, occurs in a great variety of diseases. It is, however, necessary here to consider it under two heads, viz: spasmodic colic and colic due to impaction or obstruction of the bowels.

Spasmodic colic is probably of the most frequent occurrence and consists of a violent contraction of the muscles of the intestines, causing intense pain. It is usually brought on by giving large amounts of cold water to a horse over-heated; by exposing such a horse to chilling rains after a hard drive; sometimes by giving a heavy feed of green succulent food; and in horses that are predisposed to it, a sudden change of diet may be all that is necessary to bring on an attack.

The condition is recognized by the horse suddenly showing symptoms of intense pain following some of the causes above mentioned, stamping violently with one hind foot, looking around at the flanks with an anxious expression; sweating; lying down suddenly and rolling in agony, and with occasional periods of freedom from pain followed by similar attacks.

Colic from impaction is a condition in which there is a partial or complete stoppage of the bowels, and may be brought on by overloading the stomach when in a tired out condition and particularly with dry, innutritious feed. A faulty condition of the teeth may also be a predisposing factor on account of imperfect mastication of the food. This condition is accompanied by constipation and the animal shows evidences of a continuous dull pain as compared with that of spasmodic colic, moving stiffly, lying down occasionally and showing restlessness with the absence of violent movements. It also runs a longer course usually than spasmodic colic.

In spasmodic colic a sedative or narcotic treatment should be resorted to in order to overcome the violent contraction and relieve the pain. One of the best remedies is fluid extract of Cannabis indica, or Indian hemp, given in doses of six drams by the mouth. This brings on drowsiness, and, as a rule, by the time the drowsiness has worn off the colic has disappeared. Another good remedy is chloral hydrate given in doses of one ounce dissolved in a pint of water; or if a hypodermic syringe be available, two grains of sulphate of morphine may be dissolved in a little water that has been boiled and allowed to cool and injected under the skin.

With impaction colic, entirely different remedies are needed, the object being to unload the intestines of the offending material. For this purpose five drams of aloes dissolved in a quart of hot water and combined with one ounce of oil of turpentine and one dram of fluid extract of nuxvomica may be given; or if this is not conveniently at hand, one and a half pints of linseed oil may be given, and if there is evidence of much pain three drams of Cannabis indica may also be given. Copious enemata of soap suds are beneficial also. These remedies will usually suffice, but if more drastic treatment is necessary it should be entrusted to a veterinarian.